Visual Quality and Water Resource Management in the Mission Creek Community Watershed

Complaint Investigation 010306

FPB/IRC/66

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The Complaint

This investigation examines a complaint that Riverside Forest Products Limited (the licensee) is not adequately managing and conserving water resources and visual quality in the Mission Creek community watershed, 30 kilometres east of Kelowna, BC.

The original complaint was that the forest development plans for the four major licensees operating in the watershed do not adequately protect wildlife, biodiversity and other resource values. The Board could not address all of those general, broad-ranging issues in a timely and meaningful way. The Board therefore narrowed the investigation to the issues and specific area of greatest concern to the complainant. The investigation addresses the following questions:

Water resources

1. Did the preparation and approval of a forest development plan (FDP) comply with the requirements of the *Forest Practices Code of British Columbia Act* and its regulations (the Code) for managing water resources?

2. Was the approval of the FDP reasonable, given its potential effect on water resources?

Visual quality

1. Did the preparation and approval of operational plans for a visually sensitive area comply with the requirements of the Code?

2. Was the approval of the operational plans for a visually sensitive area reasonable?

Background

The Mission Creek watershed covers 860 square kilometres on the east side of Okanagan Lake, in the Penticton Forest District. It is the largest tributary watershed in the Okanagan basin, contributing about 40 percent of the total water input into Okanagan Lake. The watershed has significance for fisheries, drinking water, recreation, agriculture and forestry. The Black Mountain Irrigation District draws water from the Mission Creek watershed for domestic use and irrigation. There are also many domestic wells along the creek. The provincial government designated Mission Creek as a heritage river in 1997 to recognize its provincial significance and serve as a model for river management.

The lower portion of the watershed is mostly private land, governed by provincial watercourse regulations and local government bylaws. The upper portion is Crown forest land, governed in part by the Code. The upper portion is designated as a community watershed, meaning under the *Community Watershed Guidebook*, water quality, quantity and timing of flow are recognized as the principle values.

Logging started in the lower portion of the watershed in the early 1900s. In the 1970s and 1980s, harvesting was directed towards controlling several mountain pine beetle outbreaks in the upper portion of the watershed. Four major licensees, the Ministry of Forest's Small Business Forest Enterprise Program and three woodlot licensees currently operate within the community watershed.

Several events have resulted in a high level of public interest in the management of the watershed. A landslide in 1990 above Belgo Creek, a tributary to Mission Creek, killed three residents of Joe Rich, a community located in the watershed. Mission Creek flooded in 1998, increasing bank erosion and contaminating some wells. Joe Rich Creek, which feeds into Mission Creek, recently exhibited high faecal coliform counts.

The complainant is concerned that approved harvesting may contribute to increases in peak stream flow, resulting in increased risk of future slides and contamination of drinking water. The complainant believes cutblocks should be selectively harvested, given stability concerns identified by a hydrologist and areas of instability identified by terrain mapping. He believes the designation of Mission Creek as a heritage river compels a higher standard of management than is now being applied.

The complainant is also concerned about the visual impact of harvesting. Of particular concern are the recently harvested cutblocks for cutting permit (CP) 119, which are visible from some homes in Joe Rich and from a highway leading to a ski resort. The complainant believes the licensee should have selectively harvested those cutblocks.

The investigation addresses the complainant's concerns about visual quality for CP 119. Those concerns arose in relation to the licensee's 1997-2002 FDP and the related silviculture prescriptions. The investigation addresses concerns regarding water resources by examining the cutblocks approved in the licensee's 1999-2004 FDP. The district manager and designated environment official approved the FDP for a two-year period beginning June 30, 1999. The officials approved a further one-year extension, through June 30, 2002.

The FDPs required approval by both the Ministry of Forests district manager and a designated environment official from the Ministry of Water, Land and Air Protection (MWLAP, formerly the Ministry of Environment, Lands and Parks) because they are in a community watershed. This report refers to the district manager and designated environment official collectively as the statutory decision-makers.

Relevant Legislation

Forest Practices Code of British Columbia Act (the Act)

Section 41 – Approval of plans by district manager or designated environment official

Section 17 – General planning requirements

Section 10 – Content requirements

Operational Planning Regulation (OPR)

Section 1 – Definitions

Section 12 – Terrain mapping in community watersheds

Section 14 – Watershed assessments required before review of FDPs

Section 18 – Map and information requirements for all FDPs

Section 37 – Information that must be available before a silviculture prescription may be approved

Discussion

Did the preparation and approval of the 1999-2004 FDP comply with the Code's requirements for managing water resources?

The complaint's concern relates to managing water quality, quantity and timing of flow. The Code's requirements for managing those values in an FDP fall under the categories of: i) content requirements; ii) assessment requirements; and iii) the requirement to be satisfied that forest resources are adequately managed and conserved.

(i) Content Requirements

The Code requires that an FDP include the following information for managing water resources:

- measures that will be carried out to protect forest resources
- a statement regarding consistency with the results and recommendations of a watershed assessment
- mapping of areas of unstable terrain
- the location of areas within a community watershed that have a high or very high soil erosion potential
- the approximate location of certain proposed roads, the year the work is proposed to take place if the timing is critical to the management of non-timber forest resources, and the riparian class of streams, wetlands and lakes that could directly impact on -- or be impacted by -- the proposed construction or replacement, if a riparian assessment is required
- known water quality objectives for community watersheds

- known community water supply intakes, fish streams, riparian class of streams, wetlands and lakes, and lake class

The FDP includes measures to protect water quality, including completed assessments and ongoing monitoring. The FDP includes a statement that it is consistent with the results and recommendations of the Mission Creek interior watershed assessment completed in December 1998. It identifies areas with a moderate or high likelihood of landslides, or high or very high soil erosion potential. It includes the approximate locations of roads and information related to those roads as required. The FDP does not provide water quality objectives, as none have been established for the Mission Creek watershed. Finally, the FDP identifies known community water supply intakes, fish streams, riparian class of streams, wetlands and lakes, and lake class. The licensee therefore complied with those content requirements of the Code for managing water resources.

(ii) Assessment Requirements

Section 14 of the OPR requires that, for areas under an FDP located within a community watershed, a licensee must have carried out a watershed assessment within the previous three years of submitting the FDP for review. A person must not submit for approval, and the district manager must not give effect to, an FDP that proposes timber harvesting or road construction or modification within a community watershed, unless specific information is available. Section 12 states that a terrain stability hazard map and soil erosion potential map must be completed for the part of the FDP that is within a community watershed.

The licensee completed a watershed assessment in December 1998, several months before submitting the FDP for review. The assessment followed the *Kamloops Forest Region Interim Watershed Assessment Procedure* of September 1998. Terrain stability and surface soil erosion hazard was mapped in a 1997 field assessment. The licensee and the district manager therefore complied with the requirement to carry out assessments prior to submitting and approving the FDP.

(iii) Requirements to be Satisfied

Section 41 of the Act states that a district manager cannot approve an operational plan unless satisfied that it will adequately manage and conserve forest resources for the area of the plan. Forest resources include water resources. A similar requirement applies to the designated environment official for FDPs that apply to areas in community watersheds.

The statutory decision-makers' rationale for approving the FDP state that they were both satisfied that the FDP adequately manages and conserves forest resources. Their rationales demonstrate that they considered staff advice and the results of relevant assessments. Their approval of the operational plans therefore complied with the Code requirement that they be satisfied.

Was the approval of the FDP reasonable, given its potential effect on water resources?

The statutory decision makers had discretion under the Code to decide whether the FDP adequately manages and conserves forest resources. In situations where a complaint involves a discretionary decision, the Board comments on the exercise of statutory discretion. The standard the Board uses in evaluating discretionary decisions is not whether, in the Board's opinion, the decision was the best decision. Rather, the standard is:

Was the decision consistent with sound forest practices, did it achieve the intent of the Code and was it based on an adequate assessment of available information?

Information considered by one or both of the statutory decision-makers included: i) the *Community Watershed Guidebook* (the guidebook); ii) the advice and report of a hydrologist from the Ministry of Water, Land and Air Protection (MWLAP); iii) the watershed assessment; and iv) Mission Creek's designation as a heritage river.

(i) The *Community Watershed Guidebook*

The guidebook recommends defining water quality, quantity and timing of flow as the principle forest values in community watersheds. It provides recommendations for forest management, including some that restrict harvesting proposed in an FDP. One such recommendation is to limit equivalent clearcut area (ECA) to less than 20 percent for catchment areas upslope of sensitive sites with terrain stability class of IV or V. The guidebook also recommends not proposing clearcutting in any area with a moderate hazard for landslides (class IV terrain) if that could result in a high risk of sediment delivery to streams. Finally, the guidebook recommends not proposing harvesting in an area that has a very high surface erosion hazard and a moderate to very high risk of sediment delivery, or in an area that is subject to high hazard for landslides (class V terrain).

The designated environment official's rationale states that Mission Creek, downstream of Fish Hawk Creek, has unstable terrain with existing landslides. It notes that proposed harvesting above that unstable area would increase the local ECA to 19.7 percent. That is under the limit recommended by the guidebook. He therefore approved the FDP, but stated that further development within that area should not be approved until cut-over areas recover.

The Board notes that the FDP does not propose harvesting in any areas identified on terrain stability maps as having moderate hazard for landslides. It also does not propose harvesting in any areas with a very high surface erosion hazard and a moderate to very high risk of sediment delivery, or in any areas subject to high hazard for landslides.

(ii) The MWLAP Hydrologist's Advice and Report

A MWLAP hydrologist provided advice on development in the watershed. He also investigated and reported on increases in flooding, erosion and channel instability in the reach of Mission Creek directly upstream and downstream of a bridge on Highway 33.

The hydrology report states that harvesting activities being planned for the upper watershed could affect stability along the steep streamside slopes of Pearson Creek and of Mission Creek above Pearson Creek. That report recommends inspecting all post-1974 slides and completing terrain stability mapping.

The designated environment official noted the unstable terrain along the slopes of both creeks. He considered the recommendations of the *Community Watershed Guidebook* and concluded that the FDP was consistent with the guidebook.

The Board notes that the terrain stability mapping had been completed prior to the approval of the FDP. The FDP did not propose harvesting in unstable terrain identified by that terrain mapping. The licensee was completing an inspection of all post-1974 slides at the time of the FDP approval.

The hydrologist advised that a channel assessment showed natural slides were filling a section of Mission Creek with sediment and material. Any increases in peak flow would increase the rate of movement of that material down the streambed to the populated areas of Mission Creek. His report stated that the basins around Pearson Creek and Mission Creek contributed disproportionately, relative to their size, to the peak flows in Mission Creek. He therefore recommended capping the ECAs in Pearson and Upper Mission at 20 percent for the next 20 years, to allow the effects of periodic floods to be properly assessed. He also recommended a detailed study of the possible hydrological effects of harvesting above 1,400 metres. Finally, he suggested developing recommendations for the watershed through a round table discussion of all assessments with all interested parties.

The designated environment official's rationale recognizes that increases in peak flow could aggravate the movement of naturally deposited materials downstream through Mission Creek. He also noted that Pearson Creek and Mission Creek above Pearson Creek contribute disproportionately to peak flow. The designated environment official calculated that the development proposed in the FDP would result in an ECA of 20.5 percent for the area of Pearson Creek and 14.9 percent for Mission Creek above Pearson Creek. He therefore approved the FDP, but stated that no further harvesting would be approved in those areas unless hydrological studies indicate that the ECA can be safely increased. The district manager's approval also required that some cutting permits, in areas approaching the recommended ECA limits, not be harvested until an updated watershed assessment provided further information.

The Board notes that, for the Pearson sub-drainage, approval of the FDP will result in an ECA slightly exceeding the recommended limit of 20 percent. However, the Board considers that the designated environment official's restriction on future approvals implements the hydrologist's recommendations for managing ECAs. A detailed study of the possible hydrological effects of harvesting above 1,400 metres was underway when the FDP was approved. A round table discussion of all assessments has now been completed and is discussed in the next section of this report.

(iii) The Watershed Assessment Procedure and Recommendations of the Watershed Assessment Committee

The 1998 watershed assessment evaluated the present state of the watershed and the cumulative impact of proposed development on peak flows, suspended sediment, bedload and stream channel stability. It identified high surface erosion and riparian buffer hazard. An advisory committee reviewed the results of the watershed assessment and other assessments, and made recommendations. The committee recommended further assessments to identify unstable terrain, monitoring of stream channel stability to develop long-term ECA levels and conducting post-harvest inspections to address any hydrologic concerns resulting from harvesting activities.

The designated environment official considered staff advice that an access management strategy by Forest Renewal BC (FRBC) would address the high surface erosion and riparian buffer hazards identified by the watershed assessment. Staff noted that the watershed assessment did not provide any specific recommendations to restrict harvesting proposals in the Mission Creek area, and that the licensee had agreed to implement all of the general recommendations of the assessment and the watershed advisory committee. The designated environmental official therefore concluded that the FDP was consistent with the watershed assessment.

The Board finds that the watershed assessment recommendations are of a general nature and do not create specific obligations for the FDP. The recommended studies were either completed or underway. Furthermore, the FRBC strategy—designed to stablilize road surfaces and improve drainage condition—was completed prior to the approval of the FDP and would, to some extent address sedimentation problems attributed to roads.

(iv) Heritage River Designation

The district manager said Mission Creek's designation as a heritage river indicates its provincial significance but does not provide any special protection. When reviewing the FDP, he therefore relied on the results of studies and assessments to ensure that proposed developments are appropriate.

The Board agrees that designation as a heritage river does not create any specific regulatory requirements under the Code or other legislation. Nevertheless, heritage river designation is a relevant consideration for the statutory decision-makers when assessing whether the FDP adequately manages and conserves forest resources under section 41 of the Act. In this case, the management guidelines for Mission Creek are broad, without specific management action. The Board finds that it was appropriate for the district manager to rely on the more specific results and recommendations of hydrological studies and MWLAP's assessments when reviewing the FDP.

In summary, the statutory decision-makers gave adequate consideration to the recommendations of the guidebook, the study by the MWLAP hydrologist, the watershed

assessment and watershed assessment committee. The FDP is consistent with those recommendations. It was therefore reasonable for the statutory decision-makers to be satisfied that the plans would adequately manage and conserve water resources.

Did preparation and approval of the operational plans in a visually sensitive area comply with the requirements of the Code?

The Code's requirements for managing visual quality in operational plans fall under the categories of: i) content requirements; ii) visual impact assessments; and iii) the requirement to be satisfied that forest resources are adequately managed and conserved. The operational plans considered here are the 1997-2002 FDP for the area of CP 119 and the related silviculture prescriptions.

(i) Content Requirements

The Code has two FDP content requirements for visual quality. One requirement is that an FDP must specify measures that will be carried out to protect forest resources. The second requirement is that an FDP must include known scenic areas. This is defined as a visually sensitive area or scenic landscape identified through a visual landscape inventory or planning process carried out or approved by the district manager. In this case, the district manager made scenic areas known through his April 26, 1996 letter to licensees regarding the establishment of known scenic areas and visual quality objectives.

The FDP incorporates the known scenic areas, including the scenic area along Highway 33 in the area of CP 119. It also specifies several measures to protect visual quality resources. For example, it states that the licensee will use digital terrain modeling to minimize the adverse visual effects of proposed harvesting. The FDP therefore meets the Code's content requirements for managing visual quality.

(ii) Visual Impact Assessment

Before a silviculture prescription is approved in known scenic areas with established visual quality objectives, section 37(1)(a) of the OPR requires completion of a visual impact assessment that demonstrates that timber harvesting is consistent with established visual quality objectives (VQOs). A VQO is defined as a resource management objective, established by the district manager or contained in a higher level plan, that reflects the desired level of visual quality based on the physical characteristics and social concern for the area.

A visual impact assessment simulates the visual effects of proposed timber harvesting and road construction on the scenic landscape. Its purpose is to demonstrate to the satisfaction of the district manager how the proposed operations will achieve the VQOs for the area.

In this case, only cutblock 1 of CP 119 requires a visual impact assessment because it is within a designated scenic area with an established VQO. The VQO in this case was partial retention, which requires that alteration remain visually subordinate to the characteristic landscape.

Repetition of the line, form, colour and texture is important to ensure a blending with the dominant elements.

The licensee completed a visual impact assessment for cutblocks 2, 3, 4 and 5 using the procedures of the *Visual Impact Assessment Guidebook*. While the assessment does not explicitly include cutblock 1, it shows that cutblock 1 is not visible from the best viewpoint along Highway 33 and will not affect visual quality from that viewpoint. The Board therefore considers that the assessment demonstrates that timber harvesting in cutblock 1 is consistent with the established VQO of partial retention. The licensee submitted that assessment along with its silviculture prescriptions for CP 119, meeting the Code's requirements for completing visual impact assessments.

(iii) Requirements to be Satisfied

Under section 41 of the Act, the statutory decision-makers cannot approve an operational plan unless satisfied that it will adequately manage and conserve forest resources for the area of the plan. Forest resources include visual quality.

The designated environment official relied on the MOF's expertise in that area. The district manager's rationale states that he was satisfied the FDP adequately manages and conserves forest resources. His rationale demonstrates that he considered the effect of the FDP on visually sensitive areas, and required further public consultation about visual impacts prior to approving the silviculture prescription. The statutory decision-makers' approval of the operational plans therefore complied with the Code requirement that they be satisfied.

Were the approvals of operational plans for the visually sensitive area reasonable?

The district manager had discretion under the Code to decide whether the FDP and silviculture prescriptions would adequately manage and conserve visual quality and should be approved. The district manager's rationale for approving the FDP noted that the licensee is planning to develop visually sensitive areas around the Joe Rich/Highway 33 corridor. Only cutblock 1 of CP 119 is in a known scenic area. Nevertheless, four other cutblocks in CP 119 were in an area recognized by the district manager as having scenic values. His rationale said that he expected the licensee to conduct further public consultation as detailed plans were developed, and that any identified issues had to be resolved to his satisfaction. His opinion was that the visual impact assessment for those four other cutblocks, completed after approval of the FDP, adequately resolved visual quality issues. He therefore approved the silviculture prescriptions for the CP 119 cutblocks.

The licensee completed the assessment for the four cutblocks that were visible from one viewpoint along Highway 33. That viewpoint provided the most open and greatest impact view of the proposed harvesting for the greatest number of potential viewers. The selection of that viewpoint was consistent with the *Visual Impact Assessment Guidebook*. The assessment concluded that the proposed alteration would approximate, but slightly exceed, the guidelines

for partial retention. A visual landscape inventory had established the desired level of visual quality for the area as partial retention.

The results of the assessment were made available for public viewing in Joe Rich. Cutblock 3 was subsequently dropped and cutblock 5 was reduced in size. As a result of those changes, the level of alteration from the CP 119 cutblocks came within the partial retention objective set by the visual landscape inventory. In the Board's opinion, it was therefore reasonable for the district manager to conclude that the operational plans for the CP 119 cutblocks adequately managed and conserved visual quality.

Conclusions

The Board concludes that the preparation and approval of the 1999-2004 FDP complied with the Code's requirements for managing water resources.

The 1999-2004 FDP was consistent with the recommendations of the *Community Watershed Guidebook*, the MWLAP hydrologist, the watershed assessment and watershed assessment committee. It was reasonable for the statutory decision-makers to be satisfied that the FDP would adequately manage and conserve water resources.

The preparation and approval of the 1997-2002 FDP for the area of CP 119 and silviculture prescriptions for the CP 119 cutblocks complied with the Code's requirements for managing visual quality.

The proposed silviculture prescriptions for the CP 119 cutblocks visible from Highway 33 met the scenic objectives for that area. It was therefore reasonable for the district manager to be satisfied that the operational plans for CP 119 would adequately manage and conserve visual quality.

Commentary

A number of initiatives to address water resource issues have been completed or are ongoing since the approval of the 1999-2004 FDP. The licensee hired geoscientists to study landslide and erosion events in the watershed. The licensee is collecting data on the snow line (the elevation of the snow in the watershed when peak water flows occur in the spring) and on snow accumulation and melt rates to maintain natural runoff patterns and minimize impacts on peak flow. The licensee has established channel and water quality monitoring stations on small tributary streams in the Mission Creek watershed to determine potential impacts of natural and industrial activities on stream flows. The four major licensees operating in the watershed are participating in the development of an adaptive management plan, to allow planning to be modified and improved as better or new information becomes available. Overall, the licensee is undertaking a large amount of analysis to manage the impacts of forestry operations on the

water resource. That analysis can be used to test the efficacy of harvesting levels and harvesting practices in the watershed.

Location of Complaint - Mission Creek